

L.116,364

B. TENT SPECIFICATION

DRAWINGS ATTACHED

Date of Application and filing Complete Specification: 16 Sept., 1965.

No. 39596/65.

Application made in Germany (No. R38799 VIII/21c) on 16 Sept., 1964.

Complete Specification Published: 6 June, 1968.

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Index at acceptance:—H1 S(6A5C3, 6A5C4, 9C6, 9D3)

Int. Cl.:—H 01 c 5/00

COMPLETE SPECIFICATION

Electric Rotary Rheostat

We, ROSENTHAL-ISOLATOREN G.M.B.H. of Selb/Bayern, a German Body Corporate, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to electric rotary rheostats which have a body of insulating material, which carries a resistance winding, usually an annular body of insulating material, usually of ceramic, as a supporting member for the resistance winding, a rotatable slider and a bearing for the latter.

If the rotary rheostat has to be very small as is necessary for many circuits, then very great difficulties arise in securing the ends of the winding.

The ends should be satisfactorily fixed mechanically and connected electrically to connecting wires leading to the outer terminals of the rheostat. The running of the slider should not be adversely effected.

According to the present invention, this problem is solved by an electric rotary rheostat having an annular body of insulating material which carries a resistance winding, wherein each end of the winding is secured between an insert member fixed in the body in the vicinity of the end of the winding and another metal member, by a welded connection between the two members, to which the winding is electrically connected thereby.

According to a preferred embodiment, the insert members are metal pins, which are mounted in radial bores in the annular body, preferably being riveted therein.

The outer metal members may each form a connecting strip which leads to the associated external terminal of the rheostat.

A preferred embodiment of the invention is illustrated in the accompanying drawings, wherein Figure 1 shows, in perspective, the unwound annular body,

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Figure 2 shows a cross-section through the annular body on the line A—A in Figure 1, Figure 3, like Figure 2, shows a cross-section through the annular body, but with the wire winding applied;

Figure 4 shows a cross-section — as in Figures 2 and 3 — but after the application of the connecting strip leading to the external terminal of the rheostat.

An annular body 1, preferably consisting of ceramic material, which is illustrated greatly enlarged, has in reality an external diameter of less than 10mm, a ring height of about 2 mm and a radial thickness of 1.2 mm. These dimensions must be kept in mind in order to realize how difficult it is to satisfactorily secure the ends of the wire winding to such small ceramic rings, and to secure the wires or metal strips leading to the outer terminals of the rotary rheostat.

The ceramic body 1, which has a gap so that the annular shape is not completely closed, has two bores 2 in which metal pins 3 are inserted and riveted, one at each side of the gap.

A winding 4 of resistance wire is now wound over the metal pins 3, as can be seen from Figures 3 and 4. A metal strip 5, which leads to an outer terminal of the rheostat not illustrated, is now welded to the associated metal pin 3 by means of spot-welding connection 6. In the course of this, the intervening resistance winding 4 is likewise welded and satisfactory electrical contact is made to it.

It is thus possible to fix the end of the winding to a riveted metal pin 3 by means of a single pot-welding operation, which is easy to carry out, and to establish the electrical connection to the connecting conductor 5 leading to the outer terminal of the rotary rheostat.

WHAT WE CLAIM IS:—

1. An electric rotary rheostat having an annular body of insulating material which carries a resistance winding, wherein each end of the winding is secured between an insert member fixed in the body in the vicinity of the end

- of the winding and another metal member, by a welded connection between the two members, to which the winding is electrically connected, thereby.
- 5 2. A rheostat as claimed in claim 1 wherein the insert members are metal pins mounted in radial bores in the annular body.
- 10 3. A rheostat as claimed in claim 2 wherein said pins are riveted in the bores.
4. A rheostat as claimed in any preceding claim wherein the other metal member is an electrical connecting strip leading to an external terminal of the rheostat.
- 15 5. A rheostat, as claimed in any preceding claim of which the annular body has an external diameter of less than 10mm, a height of approximately 2mm and a radial thickness of approximately 1.2mm.
- 20 6. An electric rotary rheostat substantially as described with reference to and as illustrated in the accompanying drawings.
- For the Applicants
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Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1968.
Published by the Patent Office, 25 Southampton Buildings, London, W.C.2, from which
copies may be obtained.

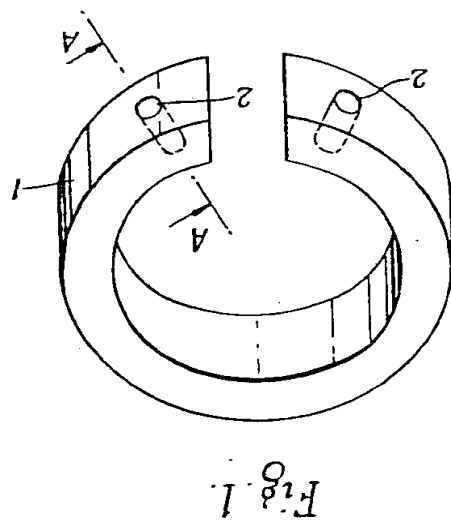


Fig. 1.

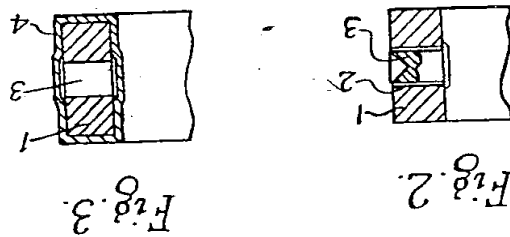


Fig. 2.

Fig. 3.

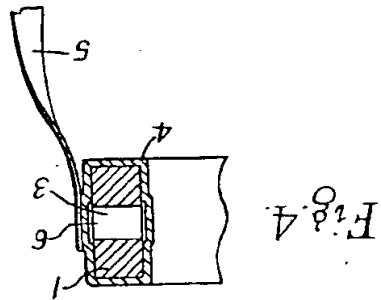


Fig. 4.

